Evaluation of Unscreened Diversions on the Sacramento River

Dan P Meier

Final Selection Panel Review

Proposal Title

#0120: Evaluation of Unscreened Diversions on the Sacramento River

Funding:

Do not fund

This proposal received a Very Good" and a "Good" rating during the independant review process. The Technical Synthesis Panel (TSP) gave it an "Adequate" rating during its review process. Comments from the TSP panel focused on concern that getting land owner cooperation could be difficult, especially because land owners would require a safe harbor agreement. There was also concern about taking the CALFED−funded screens out during the study.

The proposal is structured well, but there is still conern about how successful working with the landowners would be. Overall, this project is not a high priority for the Calfed Program at this time. Perhaps this study could be funded from another source.

There are a large number of small screens in the Sacramento River, but there is such diversity in the intakes that it would be difficult to adequately evaluate. The Selection Panel would much rather frame the questions from a bigger strategic perspective. The Selection Panel also questioned whether the Sacramento River or the Delta should be the main focus.

Reclammation's comment letter stated support for the project, that Family Water Alliance has a good repuation, and that the agency believes that safe harbor agreements are possible. However, the Selection Panel agreed that these comments were not strong enough to justify funding the project. The

Selection Panel agreed not to fund this proposal.

Public Comments

The following public comments were received for this proposal.

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Mid-Pacific Region (MP-400)
Resources Management Division
2800 Cottage Way (E-2905)
Sacramento, CA 95825-1898
Main Phone: 916-978-5200
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Facsimile Transmittal

To: Ladd Lougee % Helpline Fax: 877 408-9310

From: Dan Meier Date: 6-17-05

cc: Pages w/cover:

Subject:
Public Comments on CALFED Science Program PSP Proposal #0120

☐ Urgent ☒ For Review ☐ Please Comment ☐ Please Reply

Comments:

Ladd Lougee
Research Coordinator
CALFED Science Program
650 Capitol Mall, 5th Floor
Sacramento, CA 95814

Subject: **Public Comments on CALFED Science Program PSP Proposal # 0120: Evaluation of Unscreened Diversions on the Sacramento River**

From: Dan Meier, Bureau of Reclamation representing the Proposal Applicants

We appreciate the opportunity to provide public comments.

The Technical Reviews of this proposal acknowledged the important value of this proposal and gave it very good to excellent ratings for Goals and Justification. This proposal was put together largely due to interest by the CALFED Science Program in determining the appropriate level of future resources that should be devoted to screening diversions for protection.

A major concern of CALFED technical reviewers related to feasibility and whether there would be sufficient willing participating diverters to allow implementation this proposal. We have addressed this in three important ways: 1) Included a significant liaison program by the Family Water Alliance to solicit participants, 2) Obtained verbal commitment of regulatory agencies (USFWS, NMFS and CDFG) to provide needed ESA assurances, and 3) Included the option of monitoring at existing screened diversions by pulling existing retractable cylindrical screens, and monitoring at unscreened diversion that are currently being proposed and designed for fish screens. We are confident that we can obtain the needed participants since the regulatory agencies are strongly supportive of this monitoring effort and have indicated they will provide the needed ESA assurances. We also believe that the Family Water Alliance will be able to obtain needed diverter participation due to their considerable experience and successful track record as a liason between water diverters and State and federal agencies.

We believe the basis approach of this proposal is a sound one, and is the only method we are aware of that could provide sufficient data to answer the important scientific questions regarding the benefits of fish screening. Absent this type of monitoring program, there will likely be a continuation of major funding towards fish screening without the needed scientific information to assess whether these dollars are being spent wisely. Regulatory agencies will likely continue to push for fish screens until there is data to demonstrate that funding is better spent on other restoration or conservation activities.

Our request to CALFED is for 50% of the total proposal cost of $1,487,665 . The remaining proposal costs (50%) would be borne by the federal funded Anadromous Fish Screen Program.

Your consideration of this proposal is appreciated.

Technical Synthesis Panel Review

Proposal Title

#0120: Evaluation of Unscreened Diversions on the Sacramento River

Final Panel Rating
adequate

Technical Synthesis Panel (Primary) Review

TSP Primary Reviewer's Evaluation Summary And Rating:

The proposal is timely and the goals and objectives are clearly stated. One reviewer, however, felt that the hypothesis is destined for rejection because the workplan does no consider “many other factors that could affect the number of fish entrained by a diversion.” The proposal is also justified based on existing knowledge, and the conceptual model are reasonable, and it does a good job of explaining the basis for the work. The reviewers expressed concern about the timing of liaison with landowners/diverts, and the fact that the diversions to be studied have not yet been identified. This could lead to an inadequate number of representative diversions available for the study. One reviewer also expressed concern that the approach to analyzing the data was not clearly described. The workplan call for removing screens from some of the existing diversions to evaluate fish losses, which may be a problem if the diversions were constructed using CalFed funds. The approach appears to be technically feasible, assuming the authors can obtain cooperation a sufficient number of diverters and regulatory agencies. One reviewer expressed significant concern that this critical assumption may not be met, and they further suggested that this should have been assessed prior to submitting the proposal. The proposed products are adequate, but one reviewer felt that a peer−reviewed journal article should also be

included to add extra credibility to the results. The study team is capable and experienced. The budget is generally adequate, but the amount for Task 1 and the Family Water Alliance may be a bit high.

Additional Comments:

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Technical Synthesis Panel (Discussion) Review

TSP Observations, Findings And Recommendations:

The study addresses an important issue – the use and value of fish screens. The panel believed that useful information would be generated by this project. Although, the proposal did not spell–out how data would be analyzed. Also, the panel was not convinced that the applicant's could accomplish the tasks outlined in the proposal because of uncertainty about their ability to identify enough cooperators – there was little evidence of a publication record to make the panel confident that the results would lead to publishable papers. The question addressed is important and the panel believed that, if the applicants can execute their plan, the data generated will be useful.

Ranking: Adequate

Technical Review #1

proposal title: Evaluation of Unscreened Diversions on the Sacramento River

Review Form

Goals

Are the goals, objectives and hypotheses clearly stated and internally consistent? Is the idea timely and important?

Comments	**Yes, the goals and objectives of this study are stated clearly and consistently in the form of testable hypotheses. This is an important issue that needs to be resolved in order to help restore salmonids in the Central Valley.**
Rating	**excellent**

Justification

Is the study justified relative to existing knowledge? Is a conceptual model clearly stated in the proposal and does it explain the underlying basis for the proposed work? Is the selection of research, pilot or demonstration project, or a full−scale implementation project justified?

Comments	**A conceptual (not mathematical) model relates entrainment of juvenile salmonids in unscreened diversions to several likely causative factors (magnitude of water withdrawal, localized intake configuration, intake orientation, proximity to habitat, temperature). The model and the primary hypothesis that comes from it are reasonable in view of what is known about anadromous salmonids in the Sacramento River. The study would develop useful information for filling knowledge gaps.**
Rating	**very good**

Approach

Is the approach well designed and appropriate for meeting the objectives of the project? Is the approach feasible? Are results likely to add to the base of knowledge? Is the project likely to generate novel information, methodology, or approaches? Will the information ultimately be useful to decision makers?

Comments	**The approach is systematic and includes all the necessary elements (obtaining water diverter cooperation, selecting appropriate diversions, and monitoring physical conditions and fish entrainment to test the hypothesis). I wonder whether the timing of the liaison with the landowners/diverters (Task 1) is correct. This is the necessary first step, but it nearly coincides in time with selection of the intakes and field monitoring. What will happen if cooperation is not obtained in time? Is there some assurance that an adequate number of representative intakes will be available for monitoring in Year 1? Also, the authors recognize the potential complexity of the entrainment rate/diversion size relationship, and have appropriately stratified their sampling into two river sections. However, 24+ sites (12/section) may not be enough to test the null hypothesis, given the likely range of other environmental variables.**
Rating	**very good**

Feasibility

Is the approach fully documented and technically feasible? What is the likelihood of success? Is the scale of the project consistent with the objectives and within the grasp of authors?

Comments	**Yes, if water diverter cooperation is obtained and good sites are available for monitoring, the project and products will be feasible.**
Rating	**very good**

Monitoring

If applicable, is monitoring appropriately designed (pre−post comparisons; treatment−control comparisons)? Are there plans to interpret monitoring data or otherwise develop information?

Comments	**The authors have proposed standard, accepted monitoring techniques and will develop useful information about the characteristics of the 24+ intake sites that will be of some use for assessing other sites in the Sacramento River. Substantial biological monitoring and physical measurements are proposed. Frequent sampling (5 days/week) during the irrigation seasons (April through September) over 3 years will characterize the selected intakes well.**
Rating	**very good**

Products

Are products of value likely from the project? Are contributions to larger data management systems relevant and considered? Are interpretive (or interpretable) outcomes likely from the project?

Comments	**Yes, peer−reviewed report and periodic oral presentations will convey the results of the study in a timely manner. Data will be protected and made available to CALFED. The participation and oversight of the FSEC/Science Oversight Committee will help ensure that the monitoring protocols and data analyses are sound.**
Rating	**very good**

Additional Comments

Comments

Capabilities

What is the track record of authors in terms of past performance? Is the project team qualified to efficiently and effectively implement the proposed project? Do they have available the infrastructure and other aspects of support necessary to accomplish the project?

Comments	**All the members of the project team are very capable and experienced. The mix of expertise needed to carry out this effort (liaison with the landowner community and the resource agencies, biological and physical monitoring, project management) is well-represented in the proposal.**
Rating	**excellent**

Budget

Is the budget reasonable and adequate for the work proposed?

Comments	**The budget is adequate to do the work. The budget for Family Water Alliance ($268K) seems a bit high, especially in Years 2 and 3. It seems like most of the liaison activities (obtaining buy-in and cooperation from landowners/diverters) would be accomplished in Year 1, before any of the other Tasks 2-4 even begin.**
Rating	**very good**

Overall

Provide a brief explanation of your summary rating.

Comments	**The proposed activity will develop useful data about the loss of juvenile salmonids to unscreened diversions in the Sacramento River. This is definitely a problem that needs to be mitigated/minimized, and the**

	authors are knowledgeble about the problem and have proposed a systematic approach to developing information about these diversions. Given the variation in characteristics of the diversions and the environmental conditions that also influence entrainment rates, the proposed number of monitored diversions (about 24) may be insufficient to make sweeping generalizations about the needs for screening in the Sacramento River. However, they will monitor well the diversions that are selected for study.
Rating	**very good**

Technical Review #2

proposal title: Evaluation of Unscreened Diversions on the Sacramento River

Review Form

Goals

Are the goals, objectives and hypotheses clearly stated and internally consistent? Is the idea timely and important?

Comments	**The proposal is timely, given that the unscreened diversions may be taking a significant number of juvenile salmonids. The goal of the proposal is to develop criteria for estimating fish losses at unscreened diversions; the objectives are not as clearly stated, but can be gleaned from the body of the proposal. The hypothesis is overly simple and pre−destined for rejection when one considers that the authors themselves stated that there are many other factors other than flow that could affect the number of fish entrained by a diversion.**
Rating	**very good**

Justification

Is the study justified relative to existing knowledge? Is a conceptual model clearly stated in the proposal and does it explain the underlying basis for the proposed work? Is the selection of research, pilot or demonstration project, or a full−scale implementation project justified?

Comments	**The authors provide excellent justification for the study. Based on our existing knowledge, such a study would be a worthwhile endeavor. There is some concern about the ability to extrapolate information from 24 – 50 diversions to the 1000+ diversions, given the variability in diversion structure, location, and river morphology that are likely to be encountered. The conceptual model was well developed and clearly**

	presented in the proposal, and does a good job of explaining the basis for the proposed work.
Rating	**excellent**

Approach

Is the approach well designed and appropriate for meeting the objectives of the project? Is the approach feasible? Are results likely to add to the base of knowledge? Is the project likely to generate novel information, methodology, or approaches? Will the information ultimately be useful to decision makers?

Comments	**The most critical concern with the approach is that the diversions have not yet been identified and there doesn't appear to be a clear set of criteria for selecting diversions. I was also concerned about the potential removal of existing screens on diversions to evaluate fish losses…if these are diversions that were built using CalFed funds, then a proper monitoring program should have been established; doing so with this project appears to be a misuse of funds. Additionally, given the large number of unscreened diversion reported by the authors, it would seem unnecessary to use screened diversions. Another serious concern with the approach was the paucity of the description of the data analyses. Given that a large amount of highly variable, potentially disparate data are to be collected and in some way condensed into a set of diversion evaluation criteria, I would have expected a much more detailed description of the planned analyses, as well as clear statements of the parameters that would be measured, rather than the "could include pipe size, number of pipes…intake locations". This particular statement gives the impression that the authors are unsure of the total parameter set and may add and drop parameters as the study progresses.**
Rating	**fair**

Feasibility

Is the approach fully documented and technically feasible? What is the likelihood of success? Is the scale of the project consistent with the objectives and within the grasp of authors?

Comments	**The technical aspects of data collection are not complex, and the proposal does not rely on the use of new technology that may present problems. One of the greatest weaknesses of the proposal is that it is relying on two uncertain events. First, there is the assumption that the Family Water Alliance will be able to secure the cooperation of 24 or more diverters, yet no indication was made that such effort to identify potential cooperators had been made. This will likely prove to be a prolonged process, and should have been done prior to the preparation of the proposal. The second uncertain event is the securing of regulatory assurances from CDFG, NOAA, and USFWS related to the take of T species. Based on my interactions with these agencies on T species issues, it could take months, if not longer, to secure such assurances, if at all. Again, this is something that should have been done before the proposal was prepared.**
Rating	**fair**

Monitoring

If applicable, is monitoring appropriately designed (pre−post comparisons; treatment−control comparisons)? Are there plans to interpret monitoring data or otherwise develop information?

Comments	
Rating	**not applicable**

Products

Are products of value likely from the project? Are contributions to larger data management systems relevant and considered? Are interpretive (or interpretable) outcomes likely from the project?

Comments	**The proposal lists the standard products for a CalFed funded study, but should also include the preparation of peer-reviewed manuscripts for submission to top tier fish biology journals. This would lend extra credibility to the results and conclusions.**
Rating	**good**

Additional Comments

Comments

Capabilities

What is the track record of authors in terms of past performance? Is the project team qualified to efficiently and effectively implement the proposed project? Do they have available the infrastructure and other aspects of support necessary to accomplish the project?

Comments	**The proposal draws on experienced personnel who should have no problem conducting the research. The investigators have ample experience with work of this nature and should be able to produce their deliverables in a timely manner.**
Rating	**very good**

Budget

Is the budget reasonable and adequate for the work proposed?

Comments	**The budget looks reasonable, with the exception of that for task 1. The budget for the task of identifying and working with diverters seems too high, perhaps by a factor of 2 or 3, for what is**

	truly an exercise in public relations.
Rating	**good**

Overall

Provide a brief explanation of your summary rating.

Comments	**Though the investigators have ample experience and have based their timely proposal on a sound conceptual model, I feel that the deficiencies identified in the feasibility and approach sections are serious enough to warrant rating this proposal no higher than a 3, and possibly more like a 3.5.**
Rating	**good**